

1 **Claims**

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3 1) A method of adapting an information carrying signal  
4 that comprises a plurality of data pulses that  
5 exhibit a range of pulsewidths and which are  
6 generated by a transmitter for transmission through a  
7 propagation medium, the method comprising the step of  
8 introducing one or more sub-pulses to one or more of  
9 the plurality of data pulses prior to the information  
10 carrying signal entering the signal propagation  
11 medium wherein a pulsewidth of each of the one or  
12 more sub-pulses is less than a minimum pulsewidth of  
13 the plurality of data pulses.

14

15 2) A method of adapting an information carrying signal  
16 as claimed in Claim 1 wherein an amplitude of the one  
17 or more sub-pulses is of an opposite sign to an  
18 amplitude of an associated data pulse.

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20 3) A method of adapting an information carrying signal  
21 as claimed in Claim 1 or Claim 2 wherein the  
22 introduction of one or more of the sub-pulses are  
23 timed so that these sub-pulses are contained within  
24 one or more of the plurality of data pulses to which  
25 the sub-pulses are introduced.

26

27 4) A method of adapting an information carrying signal  
28 as claimed in any of the preceding claims wherein the  
29 introduction of one or more of the sub-pulses are  
30 timed so that these sub-pulses coincide with one or  
31 more edges of one or more of the plurality of data  
32 pulses to which the sub-pulses are introduced.

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- 1 5) A method of adapting an information carrying signal  
2 as claimed in any of the preceding claims wherein the  
3 one or more sub-pulses are introduced to one or more  
4 of the plurality of data pulses when the data pulse  
5 exhibits a pulsewidth above a first predetermined  
6 pulsewidth of the plurality of data pulses so as to  
7 provide a means for low frequency filtering the  
8 information carrying signal.  
9
- 10 6) A method of adapting an information carrying signal  
11 as claimed in any of the preceding claims wherein the  
12 one or more sub-pulses are introduced to one or more  
13 of the plurality of data pulses when the data pulse  
14 exhibits a pulsewidth below a second predetermined  
15 pulsewidth of the plurality of data pulses so as to  
16 provide a means for high frequency filtering the  
17 information carrying signal.  
18
- 19 7) A method of adapting an information carrying signal  
20 as claimed in Claim 5 wherein the first predetermined  
21 pulsewidths of the plurality of data pulses  
22 corresponds to the minimum pulsewidth of the  
23 plurality of data pulses so as to provide a means for  
24 equalising the information carrying signal.  
25
- 26 8) A method of adapting an information carrying signal  
27 as claimed in any of the preceding claims wherein the  
28 timing of introducing the one or more sub-pulses to  
29 one or more of the plurality of data pulses is  
30 variable.  
31
- 32 9) A method of adapting an information carrying signal  
33 as claimed in any of the preceding claims wherein the

1        number of sub-pulses introduced is directly dependent  
2        upon the pulsewidth of the associated data pulse.

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4    10) A method of adapting an information carrying signal  
5        as claimed in any of the preceding claims wherein the  
6        pulsewidth of the one or more sub-pulses are directly  
7        dependent upon the pulsewidth of the associated data  
8        pulse.

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10   11) A method of adapting an information carrying signal  
11        as claimed in any of Claim 4 to 10 wherein the  
12        coinciding of the one or more sub-pulses with one or  
13        more edges of one or more of the plurality of data  
14        pulses acts to time shift a rising edge of an  
15        associated data pulse.

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17   12) A method of adapting an information carrying signal  
18        as claimed in any of Claim 4 to 10 wherein the  
19        coinciding of the one or more sub-pulses with one or  
20        more edges of one or more of the plurality of data  
21        pulses acts to time shift a falling edge of an  
22        associated data pulse.

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24   13) A method of adapting an information carrying signal  
25        as claimed in Claim 11 wherein the time shifting of  
26        the rising edge of an associated data pulse comprises  
27        advancing in time the rising edge.

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29   14) A method of adapting an information carrying signal  
30        as claimed in Claim 12 wherein the time shifting of  
31        the falling edge of an associated data pulse  
32        comprises delaying in time the falling edge.

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- 1 15) A method of adapting an information carrying signal  
2 as claimed in any of Claims 11 or 14 wherein the time  
3 shifting of the edge of the associated data pulse is  
4 by a predetermined value.  
5
- 6 16) A method of adapting an information carrying signal  
7 as claimed in Claim 11 or 15 wherein the time  
8 shifting of the edge of the associated data pulse is  
9 directly dependent upon the pulsewidth of the  
10 associated data pulse.  
11
- 12 17) An electronic circuit suitable for adapting an  
13 electronic input signal of a transmitter, the  
14 electronic input signal comprising a plurality of  
15 electrical data pulses, the electronic circuit  
16 comprises an electronic input channel, a clock pulse  
17 phase delay circuit, a signal processor and an  
18 electronic output channel wherein the signal  
19 processor analyses one or more of the plurality of  
20 electrical data pulses supplied on the electronic  
21 input channel and one or more clock pulse phase delay  
22 signals provided by the clock pulse phase delay  
23 circuit so as to introduce one or more electrical  
24 sub-pulses to one or more of the plurality of  
25 electrical data pulses so as to provide an adapted  
26 electronic output signal on the electronic output  
27 channel.  
28
- 29 18) An electronic circuit as claimed in Claim 17 wherein  
30 the introduction of one or more of the electrical  
31 sub-pulses are timed so that these electrical sub-  
32 pulses are contained within one or more of the  
33 plurality of electrical data pulses to which the  
34 electrical sub-pulses are introduced.

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2 19) An electronic circuit as claimed in Claim 17 or Claim  
3 18 wherein the introduction of one or more of the  
4 electrical sub-pulses are timed so that these  
5 electrical sub-pulses coincide with one or more edges  
6 of one or more of the plurality of electrical data  
7 pulses to which the electrical sub-pulses are  
8 introduced.

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10 20) An electronic circuit as claimed in any of Claims 17  
11 to 19 wherein the clock pulse phase delay circuit  
12 comprises means for supply a first clock pulse and  
13 one or more phase delayed clock pulses to the signal  
14 processor.

15

16 21) An electronic circuit as claimed in any of Claims 17  
17 to 20 wherein the signal processor comprises first  
18 electronic means for producing an internal signal  
19 pulse when subsequent electrical data pulses exhibit  
20 substantially the same value.

21

22 22) An electronic circuit as claimed in any of Claims 17  
23 to 21 wherein the signal processor further comprises  
24 a second electronic means for introducing an  
25 electronic sub-pulse to the electronic input signal  
26 when the internal signal pulse is detected by the  
27 second electronic means.

28

29 23) An electronic circuit as claimed in any of Claims 17  
30 to 22 wherein the signal processor further comprises  
31 a third electronic means for altering the timing of  
32 the electrical subpulses so allowing the subpulses to  
33 coincide with a rising or falling edge of an  
34 electrical data pulse.

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2 24) An electronic circuit as claimed in any of Claims 21  
3 to 23 wherein the timing of the first electronic  
4 means is controlled by the first clock pulse.

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6 25) An electronic circuit as claimed in Claims 23 or 24  
7 wherein the second and third electronic means are  
8 controlled by the combination of the first clock  
9 pulse and the one or more phase delayed clock pulses.